

REMARKS

Although Applicants disagree with the Examiner's rejection of the claims under 35 USC 112, Claim 15 has been amended in order to attempt to comply with the Examiner's 35 USC 112 rejections. Specifically speaking, amended Claim 15 states that the sponge puff comprises a body formed from a compounded rubber of an NBR polymer, an organic peroxide, a blowing agent and 1-100 parts by weight of a synthetic silicic acid, based on 100 parts by weight of the NBR polymer.

Claims 12 and 14-22 have been rejected under 35 USC 112, first paragraph, for reciting the ingredients that make up the body. Applicants respectfully submit that nothing in U.S. patent law precludes the form of originally presented Claim 15. Enclosed herewith for the Examiner's benefit is a copy of the claim set of U.S. Patent No. 4,596,834 where a foamed product is also claimed with respect to its ingredients. If the Examiner maintains this ground of rejection, he is respectfully requested to provide support for this position other than his opinion.

The originally filed specification clearly provides support for the listed ingredients as they are stated in originally filed Claim 9 and in the specification. Moreover, the wording "an intermediate cell structure in which closed cells partially communicate with each other" was originally presented in the specification on page 11, last full paragraph. The phrase "a water absorption of 5% to 500%" is also originally disclosed on page 16, fourth line from the bottom in the originally filed specification. Therefore, Applicants respectfully submit that the Examiner clearly is in error. Nothing in U.S. patent law precludes an Applicant from claiming a composition, which a foamed product is, by the ingredients that make up the composition. Therefore, the 35 USC 112 rejection of the present claims clearly should be withdrawn.

Applicants additionally want to remind the Examiner of the advantages of the present invention. The water absorption of the extrusion-molded NBR foam having a large size section according to the present invention can be easily modified from a low percentage to a high percentage by passing it through press rolls. This makes the NBR foam suitable for cosmetic puffs. With the present invention, cosmetic puffs suitable for both powder-type cosmetics and liquid-type cosmetics can be produced on the same production line. This type of production was not available by conventional production techniques.

Conventionally, cosmetic puffs having high water absorption and used for powder cosmetics were made by mechanically mixing air into a latex and foaming the mixture while cosmetic puffs having a low water absorption and used for liquid cosmetics were made by expansion under heat and pressurizing conditions through the use of a press. These conventional production techniques are described in columns [0012] and [0013] of published U.S. Patent application No. US2004-0166303 of the present application. The water absorption of puffs made by expansion under heat and pressurizing additions with the use of a press having a low water absorption was not increased, even if the process of passing through press rolls was added. Therefore, the process of passing through press rolls, which is readily and continuously performed to change the water absorption by physically pressing and breaking the cell walls of the foamed puffs, was not available in conventional techniques.

On the other hand, in the present invention, the process of passing through press rolls can be successfully employed due to the extrusion molding method used for forming the puffs in the present invention. Additionally, the NBR foam composition with the addition of silica allows the process of passing through the rolls to change the water absorption more effectively. The water absorption of the NBR foam including the silica can be changed significantly with fewer times of

passing through the rolls in comparison with the NBR foam not containing silica. This allows the water absorption of the NBR foam to be easily controlled and the production equipment of the cosmetic puffs of the present invention to be simple and economical.

Favorable consideration is respectfully solicited.

Respectfully submitted,



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absorbing capacity to the product, it is preferred that latex be added in an amount equal to at least about 30 percent by weight of the dry mixture to the slurry mixture.

The test results as shown in Table 1 indicate that the water absorption (percent of original weight added) of a product embodying the present invention ranges between about 37 percent and 103 percent, which is substantially less than a typical water absorption rate of 128 percent for the product of the Britt et al patent and 400 percent for calcium silicate insulation. Although foamed borosilicate glass insulation may have a typical water absorption rate of 21 percent, foamed borosilicate glass insulations as well as calcium silicate insulations are rigid pre-formed insulating materials typically used in insulating and waterproofing applications which pre-formed insulations, unlike the new water-resistant inorganic foamed product embodying the present invention, may not be flowed into place before setting. As previously stated, the ability to flow the foamed product of the present invention into place before setting is advantageous for use in areas such as with "buried" steam lines where excavation would otherwise be required to re-insulate and waterproof the lines with such conventional materials as foamed borosilicate glass insulations.

While in accordance with the provisions of the statutes there is illustrated and described herein specific embodiments of the invention, those skilled in the art will understand that changes may be made in the form of the invention covered by the claims, and that certain features of the invention may sometimes be used to advantage without a corresponding use of the other features.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A foamed product produced from a mixture to which water has been added to form a slurry and to which slurry a latex having a surfactant and a foaming agent have been added, said mixture consisting essentially by weight of between about 15 percent and about 95 percent hydraulic cement, between 0 percent and about 85 percent inert filler, between 0 percent and about 85 percent aggregate, and between 0 percent and about 20 percent stabilizer.

2. A foamed product according to claim 1 wherein the hydraulic cement is calcium aluminate cement.

3. A foamed product according to claim 1 wherein the inert filler includes pyrophyllite and wollastonite.

4. A foamed product according to claim 1 wherein the product is a cellular refractory product.

5. A foamed product according to claim 1 wherein the aggregate includes kaolin calcine.

6. A foamed product according to claim 1 wherein the aggregate size is between about -20 mesh and about +325 mesh.

7. A foamed product according to claim 1 wherein the stabilizer is anhydrous dibasic calcium phosphate.

8. A foamed product according to claim 1 wherein the water is present in the slurry after the addition of latex in an amount sufficient to provide a solids content of between about 55 percent and about 70 percent.

9. A foamed product according to claim 1 wherein the latex is a nonionic latex.

10. A foamed product according to claim 9 wherein the amount of latex added to the slurry is equal to at least about 30 percent by weight of the mixture.

11. A foamed product according to claim 1 wherein the foaming agent is phosphoric acid.

12. A foamed product according to claim 1 wherein the ratio by weight of the slurry, after the addition of the latex, to the foaming agent is between about 2:1 to about 7:1.

13. A foamed product according to claim 1 wherein the amount of latex added to the slurry is equal to between about 5 percent and about 50 percent by weight of the mixture.

14. A foamed product according to claim 1 wherein the amount of latex added to the slurry is equal to at least about 30 percent by weight of the mixture.

15. A foamed cellular refractory insulating water-resistant product which, before setting, may be flowed over a distance of at least 100 feet, the product is produced from mixture to which water has been added to form a slurry and to which slurry a foaming agent and at least about 5 percent by weight of the mixture of nonionic latex has been added, said mixture consisting essentially by weight of between about 15 percent and about 95 percent calcium aluminate cement, between 0 percent and about 85 percent inert filler, between 0 percent and about 85 percent aggregate, and between 0 percent and about 20 percent stabilizer.

16. A foamed product according to claim 15 wherein the foaming agent is phosphoric acid, and the ratio by weight of the slurry, after the addition of the latex, to the mineral acid is between about 2:1 and about 7:1.

17. A foamed product according to claim 15 wherein the inert filler includes pyrophyllite and wollastonite.

18. A foamed product according to claim 15 wherein the stabilizer is anhydrous dibasic calcium phosphate.

19. A foamed product according to claim 15 wherein the water is present in the slurry, after the addition of the latex, in an amount sufficient to provide a solids content of between about 55 percent and about 70 percent.

20. A foamed product according to claim 15 wherein the aggregate size is between about -20 mesh and about +325 mesh.

21. A foamed product according to claim 15 wherein the mixture consists essentially by weight of about 25 percent calcium aluminate cement, about 22 percent inert filler, about 48 percent aggregate, and about 5 percent stabilizer, and the amount of latex is equal to about 5 percent by weight of the mixture.

22. A foamed product according to claim 21 wherein the inert filler consists essentially by weight of the dry mixture of about 13 percent pyrophyllite and about 9 percent wollastonite, the aggregate consists essentially of kaolin calcine, the water is present in the slurry, after the addition of latex, in an amount sufficient to provide a solids content of about 67 percent, and the foaming agent is phosphoric acid.

23. A foamed product according to claim 15 wherein the amount of latex added to the slurry is equal to at least about 30 percent by weight of the mixture.

24. A foamed product according to claim 1 wherein the foaming agent is a mineral acid.

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